REMARKS

The Office Action mailed February 18, 2004 has been received and the Examiner's comments carefully reviewed. Claims 3, 12 and 19-21 have been allowed. Applicants thank the Examiner for this notification. Claim 10 has been amended. Claims 37-40 have been added. No new subject matter has been added. Claims 1, 3-10, 12-21 and 23-40 are currently pending. Applicants respectfully submit that the pending claims are in condition for allowance.

Rejections Under 35 U.S.C. §102

I. The Examiner rejected claims 10, 13-18, 23 and 25-26 under 35 U.S.C. §102(b) as being anticipated by Imoto et al. (U.S. Patent 4,755,008). Applicants respectfully traverse this rejection, but have amended claim 10 to advance this application to allowance. Applicants reserve the right to pursue the original subject matter via a continuing application.

Claim 10 has been amended to clarify that the recited brake valve includes a primary valve assembly including a housing that defines a primary pressure chamber and a housing outport. The secondary valve increases a braking output, the increased braking output being provided within the primary pressure chamber and communicated through the housing outport of the primary valve assembly.

Imoto does not disclose a brake valve having a secondary valve that increases the braking output, the increased braking output being provided within the primary pressure chamber of the primary housing and communicated through the housing outport of the primary housing. Rather, Imoto discloses a master cylinder 12 and a valve 201, both of which have separate outputs that flow to a summation device 202. The valve 201 operates such that the increased output is provided within the summation device 202, not a pressure chamber defined by the housing of the master cylinder 12. Further, the increased braking output is communicated through a summation outport, not an outport of the housing of the master cylinder 12.

At least for these reasons, Applicants respectfully submit that claim 10, and dependent claims 13-18, 23, and 25-26 are patentable.

II. The Examiner rejected claims 27-36 under 35 U.S.C. §102(e) as being anticipated by Lubbers et al. (U.S. Patent 6,007,160). Applicants respectfully traverse this rejection.

Lubbers discloses a brake boost device 10 for providing a smooth brake pedal feel. The device 10 includes a boost piston assembly 16 interconnected between a master cylinder 14 and a brake pedal 18. To pressurized the boost piston assembly 16, the brake pedal 18 is depressed, which in turn causes a pressure control valve 37 to open and pressurize interconnected chambers 62, 63 of the boost piston assembly 16. A control circuit 36 is used to detect motion of the brake pedal to provide an initial rapid pressurization of the chambers of the boost piston assembly 16. The rapid increase in boost pressure assists the driver to achieve a smooth pedal apply; the pedal force curve is smooth, resulting in a good pedal feel. Column 10, lines 26-39 and 53-58.

A. Claims 27 and 28

Claim 27 recites a braking system including a pedal, a primary valve assembly, and a secondary valve assembly. When a fluid pressure chamber of the primary valve is pressurized, the primary valve provides a first braking output and a first pedal feedback force. The first braking output and the first pedal feedback force are provided when the pedal in a first position. When a secondary valve assembly receives a signal to pressurize the fluid chamber of the primary valve assembly, a second braking output and a second pedal feedback force are provided; the second braking output and the second pedal feedback force still corresponding to the first position of the pedal.

Lubbers does not disclose a system that provides first and second braking outputs each at the same first brake pedal position, and first and second pedal feedback forces each at the same first brake pedal position. Rather, as shown in FIG. 5, at any particular pedal position, the device of Lubbers is configured to provide a particular braking pressure, not first and second braking pressures at a particular pedal position. Likewise, as shown in FIG. 6, at any particular pedal position, the device of Lubbers is configured to provide a particular pedal force, not first and second pedal forces at a particular pedal position.

In short, the Lubbers device is specifically programmed to provide a smooth pedal force curve by eliminating oscillation and irregularities of pedal travel versus pedal force. Column 10, lines 34-58. The overall operation of Lubbers and the claimed invention are

different. For example, the system of claim 27 recites first and second braking outputs and first and second pedal feedback forces at a first pedal position, which are instead designed to accommodate varying braking conditions and operating situations (e.g. vehicle speed, vehicle payload, slip detection, etc.).

At least because Lubbers does not disclose a system providing first and second braking outputs and first and second pedal feedback forces at a first pedal position, Applicants respectfully submit that independent claim 27, and depend claim 28 are patentable.

B. Claims 29-33

Claim 29 recites a braking system including a primary valve assembly and a secondary valve assembly. The braking system provides a first braking output and a corresponding first force when a manual control input is operated at a first input valve, and a second braking output and a corresponding second force when a manual control input is operated at the first input valve.

For similar reasons as discussed with regards to claim 27, Applicants respectfully submit that independent claim 29, and dependent claims 30-33 are patentable.

C. Claims 34-36

Claim 34 recites a braking system including a pedal interconnected to a primary valve assembly and a secondary valve. The braking system defines an operating ratio of pedal feedback force to operating position. The secondary valve is configured to increase the operating ratio while the pedal remains in the first operating position.

Lubbers does not disclose a braking system that increases an operating ratio while the pedal remains in a first operating position. Rather, Lubbers discloses only one particular operating ratio along the smooth curve of FIG. 6 at a first operating position.

At least for this reason, Applicants respectfully submit that independent claim 34, and dependent claims 35-36 are patentable.

Rejections Under 35 U.S.C. §103

The Examiner rejected claims 1, 4-9, 23 and 24 under 35 U.S.C. §103(a) as being unpatentable over Imoto et al. (U.S. Patent 4,755,008). Applicants respectfully traverse this rejection.

Claim 1 recites a braking system including a secondary valve assembly integral with a primary valve assembly; the secondary valve assembly assists the braking output produced by the primary valve assembly.

Imoto does not teach or suggest integral primary and secondary valve assemblies. In contrast, the master cylinder 12 is separate from valve 201, both of which are separate from a summation device 202.

The Examiner cited *In re Larson* as a basis for maintaining this rejection. It is noted that *In re Larson* involved a device that was made integral wherein that integral device previously comprised "several parts rigidly secured together as a single unit." MPEP 2144.04(V)(B) (underline added).

To provide a braking system as recited in claim 1, each of the master cylinder 12, the valve 201, and the summation device 202 of Imoto would have to be made integral. In the disclosed system, each of the master cylinder 12, the valve 201, and the summation device 202 are not "rigidly secured together as a single unit." In contrast to the parts being "rigidly secure together as a single unit," Imoto teaches networking the components via tubing to accommodate spatially separated placement of each part. Accordingly, Applicants respectfully submit that the obviousness criterion as set forth by In re Larson has not been met. Further, incorporating these three components into a single unit would render the device inoperable, as the device would be too large and too bulky for its intended use on a vehicle.

At least because making each of the master cylinder 12, the valve 201, and the summation device 202 into an integral unit is neither taught nor suggested by Imoto, and because the obviousness criteria of *In re Larson* is not met, Applicants submit that claim 1, and dependent claims 4-9 and 24 are patentable.

Claim 23 depends upon claim 10. In view of the remarks regarding independent claim 10, further discussion regarding the independent patentability of dependent claim 23 is believed to be unnecessary. Applicants submit that dependent claim 23 is in condition for allowance.

New Claims 37-40

Claims 37 and 38 depend upon claim 27. Claim 39 depends upon claim 29. Claim 40 depends upon claim 34. In light of the above comments regarding independent claims 27, 29 and 34, Applicants respectfully submit that dependent claims 37-40 are patentable.

Allowable Subject Matter

Claims 3, 12, 19, 20 and 21 are allowed. Applicants thank the Examiner for this notification.

SUMMARY

It is respectfully submitted that each of the presently pending claims (claims 1, 3-10, 12-21 and 23-40) is in condition for allowance and notification to that effect is requested. The Examiner is invited to contact Applicants' representative at the below-listed telephone number if it is believed that prosecution of this application may be assisted thereby.

Although certain arguments regarding patentability are set forth herein, there may be other arguments and reasons why the claimed invention is patentably distinct. Applicants reserve the right to raise these arguments in the future.

Respectfully submitted,

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Date: April 30, 2004

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